

FORM MR-MO
(Revised 7/87)

FOR DIVISION USE ONLY

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July 11, 1988

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
Telephone: (801) 538-5340

NOTICE OF INTENTION TO COMMENCE MINING OPERATIONS
MINING AND RECLAMATION PLAN

Based on Provisions of the Mined Land Reclamation Act, Title 40-8, Utah Code Annotated 1953, General Rules and Regulations and Rules of Practice and Procedures, By Order of the Board of Oil, Gas and Mining.

This form applies only to mining operations which disturb or will disturb greater than five acres at any given time.

"MINING OPERATIONS" means those activities conducted on the surface of the land for the exploration for, development of, or extraction of a mineral deposit, including, but not limited to, surface mining and the surface effects of underground and in situ mining, on-site transportation, concentrating, milling, evaporation, and other primary processing.

"Mining operation" does not include: the extraction of sand, gravel, and rock aggregate; the extraction of oil and gas as defined in Chapter 6, Title 40; the extraction of geothermal steam; smelting or refining operations; off-site operations and transportation; or reconnaissance activities which will not cause significant surface resource disturbance or involve the use of mechanized earth-moving equipment such as bulldozers or backhoes.

PLEASE NOTE: If extra space is required to complete a section, please attach additional sheets and include cross-referenced page numbers as necessary. The operator may submit this information on an alternate form, however the same or similar format must be used.

I. GENERAL INFORMATION (Rule R613-005-104)

1. Mine Name: ALTO, IBEX, KEYSTONE & MONARCH
2. Mineral(s) to be Mined: GOLD, SILVER
3. Name of Applicant or Company: JUMBO MINING COMPANY
Corporation (X) Partnership () Individual ()
4. Permanent Address: 6305 FERN SPRING COVE
AUSTIN, TX
78730
5. Company Representative (or designated operator):
Name: E. B. KING
Title: PRESIDENT
Address: 6305 FERN SPRING COVE AUSTIN, TX
Phone: 512-346-4537
6. Location of Operation:
County(ies) JUAB & MILLARD COUNTIES
Township: 14S Range: 11W Section: 35+36
Township: 15S Range: 10W Section: 6, 7 & 8
Township: 15S Range: 11W Section: 1
7. Ownership of the land and surface: Private (Fee), Public Domain (BLM), National Forest (USFS), State of Utah or other:

PRIVATE -	Name: <u>IBEX GOLD MINING TRUST</u>	} Address: <u>SALT LAKE CITY, UTAH 84111</u> <u>136 E. SO. TEMPLE #1060</u> <u>SEE JUMBO ADDRESS</u>
STATE LEASE -	Name: <u>"</u>	
BLM -	Name: <u>"</u>	
BLM -	Name: <u>ASOMA (UTAH), INC.</u>	
BLM -	Name: <u>FRANK & ROBERT LAW - 75 W. MAIN ST. DELTA, UTAH 84624</u>	

8. Owner(s) of record of the minerals to be mined:

Name: <u>IBEX GOLD</u>	Address: <u>AS ABOVE</u>
Name: <u>JUMBO MINING CO</u>	Address: <u>AS ABOVE</u>
Name: <u>ASOMA (UTAH), INC.</u>	Address: <u>AS ABOVE</u>
Name: _____	Address: _____

9. Have the above owners been notified in writing? Yes X No ____.
If no, why not? _____
10. Does the operator have legal right to enter and conduct mining operations on the land covered by this notice? Yes X No ____.

II. MAPS (Rule R613-005-105)

1. Base Map

A true and correct topographic base map (or maps) with appropriate contour intervals must be submitted with this Notice which show all of the items on the following checklist. The scale should be approximately 1 inch = 2,000 feet (preferably a USGS 7.5 minute series or equivalent topographic map where available) showing the location of lands to be affected in sufficient detail to permit calculation of proposed surface disturbance. ✓

Map Checklist

Please check off each section as it is drawn on the map(s). Does the map show:

- (a) Property boundaries of surface ownership of all lands which are to be affected by the mining operations; SEE LAND STATUS MAP ✓
- (b) Perennial streams, springs and other bodies of water, roads, buildings, landing strips, electrical transmission lines, water wells, oil and gas pipelines, existing wells or boreholes, or other existing surface or subsurface facilities within 500 feet of the proposed mining operations; (None) ✓
- (c) Proposed route of access to the mining operations from nearest public highway maintained (Map scale appropriate to show access); ✓
- (d) Known areas which have been previously impacted by mining or exploration activities within the proposed mining permit area. ✓
- (e) Acreages proposed to be disturbed or reclaimed each year (or other suitable time period) SEE ALSO EXHIBIT A ✓

2. Surface Facilities Map

A surface facilities map shall be provided at a scale of not less than 1" = 500'. ✓

EXHIBIT A

	TONS ORE	TONS WASTE	ACRES DISTURBED	VEGETATION SURVEY	ACRES TO BE REVEGETATED	ACRES TO BE STABILIZED
ALTO PIT	90,000	80,000	PIT = 1.00 WASTE AREA = 2.66	VEG. = 30% ROCK = 60% BARE GROUND = 10%	WASTE DUMP TOP 2.0 AC.	PIT + WASTE SIDES 1.66 AC.
IBEX UNDER- GROUND	10,000	1,000 (IF ANY)	DEVELOP = .21 WASTE AREA = .18	ROCK = 95% VEG = 5%	WASTE DUMP TOP 14 AC.	1.25 AC.
KEYSTONE TEST PIT	15,000	0	.51	ROCK = 35% VEG = 40% BARE GROUND = 15%	0	.51 AC.
MONARK TEST PIT	15,000	0	.34	ROCK = 75% VEG = 10% BARE GROUND = 15%	0	.34 AC.
NEW HAULAGE ROADS	—	—	1.79	ROCK = 25% VEG = 40% BARE GROUND = 35%	4.79 AC.	0
HAULAGE ROAD ON EXIST- ING ROAD	—	—	1.50	ROCK = 25% VEG = 40% BARE GROUND = 35%	0 AC. WILL REMAIN OPEN AS BLM + COUNTY ROADS	0
MIZPAH PIT	88,000	135,000	THE MIZPAH PIT IS TO BE FILED AS AN AMENDMENT AFTER THE SOIL AND VEGETATION SURVEYS HAVE BEEN TAKE			
NORTHRISE PIT - DRUM MINE	184,000	410,000				
UNDERGROUND - SO. PIT DRUM MINE	9,000	0				
TOTAL	411,000	626,000	1.19 AC.	ROCK = 40.86% VEG = 34.6% BARE GR = 24.54%	6.93 AC.	2.76 AC.

Map Checklist

Please check off each section as it is drawn on the map. Does the map show:

- (a) Proposed surface facilities, including but not limited to buildings, stationary mining/processing equipment, roads, utilities, power lines, proposed drainage control structures, and the location of topsoil storage areas, overburden/waste dumps, tailings or processed waste facilities, disposal areas for overburden, solid and liquid wastes, and wastewater discharge, treatment and containment facilities; See WSMC ALSO PERMITS ✓
- (b) A border clearly outlining the extent of the surface disturbed area proposed to be affected by mining, and the number of acres proposed to be affected; SEE EXHIBIT A ✓
- (c) The location of known test borings, pits, or core holes. ✓

3. Additional Maps

Additional maps and drawings may be required as applicable in accordance with Rule R613-005-105.3.

III. OPERATION PLAN (Rule R613-005-106)

1. Acreage to be disturbed:

Minesite (operating, storage, disposal areas, etc.):	4.90 AC
Access/haul roads/conveyors:	6.29 AC
Associated on-site processing facilities:	0
PROCESSING AREA WILL BE AT THE DRUM MINE - NO NEW ACREAGE WILL BE DISTURBED	
Total:	11.19

2. Describe methods and procedures to be employed for mining, on-site processing and concurrent reclamation.

SEE EXHIBIT B

3. Depth to groundwater (if known) NOT KNOWN > 800 ft.

EXHIBIT B

THE FOLLOWING LIST DESCRIBES THE METHODS AND PROCEDURES TO BE USED FOR MINING, PROCESSING AND CONCURRENT RECLAMATION.

- (A) OPEN PITS WILL BE MINED ^{BY} CONVENTIONAL MINING METHODS. ORE WILL BE DRILLED, ~~BLASTED~~ BLASTED AND LOADED BY RUBBER TIRE LOADERS ONTO 35 TON HAUL PACKS AND THEN HAUL TO THE DRUM MINE PROCESSING FACILITIES.
- (B) ORE WILL BE CRUSHED TO MINUS 1" AND THEN STACKED ~~ON~~ ON EXISTING HEAPS BY LOADERS, TRUCKS AND/ CONVEYOR BELTS.
- (C) UNDERGROUND ~~MINING~~ DRIFTS AND DECLINES WILL ^{BE} DRILLED (BY JACKLEGS), BLASTED AND REMOVED BY 1 AND 2 YD RUBBER TIRE MULKERS (WITH SCRUBBERS); MINING OF LARGE ORE ZONES WILL ^{BE} DONE BY SHRINK STOPING OR ROOM AND PILLAR METHOD; EXTERNAL VENTILATION WILL BE USED WHEN NEEDED. UNDERGROUND ORE WILL BE PROCESSED SAME AS PIT ORE.
- (D) PITS WILL BE BENCHED (20-30') TO OBTAIN A 45° SLOPE.
- (E) ONCE A PIT, WASTE DUMP OR TUNNEL IS COMPLETED, THE RECLAMATION WILL START.

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* SEE FOOTNOTE BELOW

4. Thickness of soil material to be stockpiled. 0 inches
Area from which soil material can be salvaged 0 acres
Volume of soil to be stockpiled 0 cu. yds.
(cross reference with item IV-17)
5. Thickness of overburden 0 ft.
6. Thickness of mineral deposit. 100 ft.
7. Volume of ~~refuse, tailings, and processing waste~~ stockpiles. 491,000 TONS OR 327,000 cu. yds.
8. Acreage of tailings ponds and water storage ponds to be constructed. NA acres
WILL USE DRUM MINE PONDS
9. Describe how topsoil or subsoil material will be removed, stockpiled and protected. NA
10. Describe how overburden material will be removed and stockpiled. NA
11. Describe how tailings, waste rock, rejected materials, etc. will be disposed of. WASTE ROCK WILL BE DRILLED, BLASTED AND MOVED TO PERMANENT DUMP SITES (SEE MAPS). ROCK WILL BE MOVED BY 8-10 YD RUBBER TIRE LOADERS, D9 CAT AND 35 TON HAUL PACKS.
12. Potentially toxic materials must be analyzed for toxicity. Describe the nature of any toxic materials which will be used, encountered, or generated onsite (See Rule R613-001-123). NA
- Specify analyses to be conducted on these materials. _____

NOTE: The Division may stipulate additional analyses.

13. For each tailings pond, sediment pond, or other major drainage control structures, attach design drawings and typical cross-sections. NA

* FOOTNOTE

THE PROPOSED PIT, TEST PITS AND UNDERGROUND DECLINE ALL LIE ON ROCKY RIDGETOPS AND STEEP HILLSIDES AND HAVE VERY LITTLE OR NO SOIL DEVELOPMENT. ALL AREAS HAVE HAD PREVIOUS SURFACE MINING OR EXPLORATION DISTURBANCE. SEE PHOTOS FOR VEGETATION, SOIL AND LAND DISTURBANCE. SINCE SOIL DEVELOPMENT IN THE PIT AND WASTE DUMP AREA IS NEGLIGIBLE, THERE WILL BE NO REMOVING AND STOCKPILING OF SOIL.

410,000 tons at the Drum
81,000 tons at Alto-Iber

14. Describe any proposed effluent discharge points (NPDES) and show their location on the map provided under Rule R618-005-105.2. Give the proposed discharge rate and expected water quality. Attach chemical analyses of such discharge if available NA

15. Vegetation - The operator is required to return the land to a useful condition and reestablish at least 70 percent of the premining vegetation ground cover (as measured on site before mining or on similar adjacent areas if already mined).

The ground cover percentage figure is determined by sampling and averaging the vegetation type(s) on the areas to be mined (see attachment I for sampling methods).

- (a) Vegetation Survey The following information needs to be completed based upon the vegetation survey:

Sampling method used OCULAR ESTIMATION

Number of plots or transects 65

<u>Ground Cover</u>	<u>Percent</u>	
Vegetation (perennial grass, forb and shrub cover)	<u>34.60</u>	SEE EXHIBIT A AND PHOTOS
Litter	<u>—</u>	
Rock/rock fragments	<u>40.86</u>	
Bare ground	<u>24.54</u>	
	100%	

Revegetation Requirement - 70 percent
of above vegetation figure)

24.22 %

List the four (4) predominant perennial species of vegetation growing on the area.

SHAD SCALE

WHEAT GRASS

DWARF SAGE

NEEDLE GRASS

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- (b) Photographs - The operator may submit photographs (prints) of the site sufficient to show existing vegetation conditions. These photographs should show the general appearance and condition of the area to be affected and may be utilized for comparison upon reclamation of the site. Photographs should be clearly marked as to the location, orientation and the date that the pictures were taken. (ATTACHED)

16. Soils - The plan shall include an order 3 Soil Survey (or similar) and map. This information is needed to determine which soils are suitable for stockpiling for revegetation. This soil data may be available from the local Soil Conservation Service office, or if on public lands, from the land management agency. The map needs to be of such scale that soil types can be accurately determined on the ground (see attachment I).

- (a) Each soil type to be disturbed needs to be field analyzed for the following: SEE FOOTNOTE FOR ITEM III 4

Depth of soil material _____ inches
Volume (for stockpiling) _____ cu. yds.
Texture (field determination) _____
pH (field determination) _____
(cross reference with item IV - 5)

- (b) Where there are problem soil areas (as determined from the field examination) laboratory analysis may be necessary for some or all of the following parameters:

Electrical Conductivity _____
Sodium Adsorption Ratio _____
Saturation % _____
Organic matter percentage _____
Available P _____
Available N-NO₃ _____
pH (laboratory) _____
Texture (laboratory) _____

NOTE: Soil samples to be sent to the laboratory for analysis need to be about one pint in size, properly labeled, and in plastic bags. Each of the soil horizons on some sites may need to be sampled.

17. Provide a narrative description of the geology of the area and/or a geologic cross section. THE DRUM MTNS CONSIST OF A WESTERNLY

TILTED FAULT BLOCK COMPOSED OF 10,000 FEET OF PRECAMBRIAN AND CAMBRIAN
QUARTZITES WHICH ARE OVERLAIN BY 3000 FEET OF CAMBRIAN LIMESTONES, DOLOMITE
AND SHALE. THESE ROCKS HAVE BEEN INTRUDED BY QUARTZ DIORITE, QUARTZ MONZONITE,
RHYOLITIC PLUGS, STOCKS AND DIKES. VOLCANIC ROCKS OVERLIE THE LIMESTONES
ON THE OUTER FRINGES.
MINERALIZATION OCCURS ALONG HIGH ANGLE NORMAL FAULTS AND
FAVORABLE LIMESTONE BEDS. SILICA, IRON AND GOLD HAVE REPLACED
THE LIMESTONE ALONG CERTAIN FAULTS AND BEDS.

IV. IMPACT ASSESSMENT (Rule R613-005-108)

Please provide a general narrative description identifying potential surface and/or subsurface impacts. Where applicable, this description should include surface and groundwater systems, species of high interest or their critical habitats, existing soil resources for reclamation, slope stability, erosion control, air quality, and public health and safety.

SEE EXHIBIT C

V. RECLAMATION PLAN (Rule R613-005-109)

1. List current land use(s) other than mining: GRAZING
2. List future post-reclamation land-use(s) proposed: GRAZING
3. Describe each phase of reclamation of the minesite in detail under the following categories:

(a) Disposal of Trash

Describe how building, foundations, trash and other waste materials will be disposed of. THERE SHOULD BE NO FOUNDATIONS, TRASH AND OTHER WASTE MATERIALS AT THE PITS - DISPOSAL AT MILLSITE (DRUM MINE) WILL BE IN ACCORDANCE WITH THE APPROVED PERMIT # ACT/027/007

(b) Backfilling and Grading

Describe equipment and methods to be employed, amount of materials to be moved and final disposition of any stockpiled materials. NA

(c) Soil Material Replacement

In order to reestablish the required ground cover, one to two feet (depending on underlying material) of suitable soil material usually has to be redistributed on the areas to be reseeded. If the stockpiled soil isn't sufficient for this, soil borrow areas will need to be located.

How much soil material is planned to be put on the area to be reseeded? 0 inches

EXHIBIT C - IMPACT ASSESSMENT

THE FOLLOWING LIST PROVIDES A GENERAL DESCRIPTION IDENTIFYING POTENTIAL SURFACE AND/OR SUBSURFACE IMPACTS.

- (A) THERE ARE NO ANNUAL SURFACE STREAMS OR SIGNIFICANT BODIES OF STANDING WATER WITHIN 10 MILES (A FEW SMALL SPRINGS OCCUR 1 TO 3 MILES NORTH OF PROJECT).
- (B) THERE ARE NO KNOWN ENDANGERED PLANTS OR WILDLIFE.
- (C) AS MENTIONED, THE SOIL CONTENT AT THE PROPOSED PITS IS NEGLIGIBLE, THEREFORE NO SOIL STOCKPILE OR BORROW AREAS WILL BE NEEDED.
- (D) PIT WALLS WILL BE 45°
- (E) PITS WILL BE MINED ON 10-15' HATS AND BENCHED EVERY 20-30' DEPENDING ON PIT, ROCK TYPE AND WALL STABILITY. IF PIT WALLS HAVE HIGH STABILITY, A VARIABLE REQUEST WILL BE FILED FOR STEEPER PIT WALLS.
- (F) WASTE DUMP SIDES SHALL BE AT THE ANGLE OF REPOSE.
- (G) ROCK BOLTS AND SCREEN WILL BE USED FOR ANY ~~UNSTABLE~~ BAD GROUND IN THE UNDERGROUND DRIFTS
- (7) PITS AND WASTE DUMPS ARE GENERALLY AT THE TOPS OF THE DRAINAGE SYSTEM, THEREFORE, VERY LITTLE WATER (EXCEPT FOR DIRECT RAINFALL) WILL COME IN CONTACT WITH THEM.
- (8) COARSE ROCK WILL BE PLACED ON THE SIDES OF WASTE DUMPS TO PREVENT EROSION.
- (9) TOPS OF WASTE DUMPS WILL BE RIPPED AND SEEDED.
- (10) IF ^{MAJOR} EROSION OCCURS, SIDES OF DUMPS MAY HAVE TO BE SEEDED AND/OR TERRACED ALONG WITH CATCH BASINS PLACED DOWN DRAINAGE.
- (11) NEW HAULAGE ROADS WILL ^{BE} WINTERIZED TO KEEP DRAINAGE OFF; THEN ROADS WILL BE RIPPED AND SEEDED.
- (12) HAULAGE ROADS ON EXISTING ROADS WILL REMAIN OPEN AS BLM, COUNTY AND PRIVATE ROADS.
- (13) HAULAGE ROADS ON STEEP SLOPES WILL HAVE A THREE FOOT HIGH BERM (WITH CUTOUTS TO ALLOW DRAINAGE)
- (14) DURING MINING, HAUL ROADS WILL BE WATERED TO CONTROL DUST (CALCIUM CHLORIDE MAY ~~BE~~ ALSO BE USED)
- (15) BLASTED ORE IN PIT WILL BE WATERED AND/OR MISTERS ON THE CRUSHER WILL BE USED FOR DUST CONTROL WHILE CRUSHING.

EXHIBIT - (CONT.)

- (16) HIGH WALLS WILL BE POSTED AND FENCED (OR BLOCK WITH ROCK)
- (17) ENTRANCE RAMPS TO PITS WILL BE BLOCKED
- (18) UNDERGROUND WORKINGS WILL BE POSTED AND THE PORTALS BURIED
- (19) POWDER MAGAZINE WILL BE AT THE DRUM MINE.
INSIDE FENCED, SECURE AREA.
- (20) DRILL HOLES WILL BE PLUGGED
- (21) ANY CONTINUING MINING, LEACHING AND FUTURE RECLAMATION AT THIS DRUM MINE WILL BE IN ACCORDANCE WITH ITS ACTIVE PERMIT (ACT/027/007)

Where will this material come from? NA

How will it be transported and spread? NA

(d) Seed Bed Preparation

Describe how the seedbed will be prepared and equipment to be used. WASTE DUMP TOPS AND NEW HAULAGE ROADS WILL RIPPED

(The Division recommends ripping or discing six inches deep)

(e) Seed Mixture - List the species to be seeded:

<u>Species Name</u>	<u>Seeding Rate</u> (lbs Pure Live Seed/Acre)
<u>WESTERN WHEATGRASS</u>	<u>20 LBS / ACRE</u>
<u>INDIAN RICEGRASS</u>	<u>"</u>
<u>NEEDLE & THREAD GRASS</u>	<u>"</u>
<u>FOUR-WING SAGEBRUSH</u>	<u>"</u>

(The Division recommends seeding 20 lbs./acre of native and introduced adaptable species of grass, forb, and browse seed and will provide a specific species list if requested)

(f) Seeding Method

Describe method of planting the seed. DRILLING AND/OR HAND BROADCAST IN EARLY FALL

(The Division recommends planting the seed with a rangeland or farm drill, or if broadcast seeded, harrow or rake the seed 1/4 to 1/2 inch into the soil. Fall is the preferred time to seed)

(g) Fertilization

Describe fertilization method and rate. SHOULD NOT BE NEEDED WITH THIS TYPE OF VEGETATION BUT VISUAL EXAMINATION 6-12 MONTHS AFTER SEEDING WILL DETERMINE IF FERTILIZERS ARE NEEDED
(The Division recommends broadcast fertilization at the time of seeding of 200 lbs./acre of diammonium phosphate 18-46-0)

(h) Other Revegetation Procedures

If other reclamation procedures, such as mulching, irrigation, etc., are planned, describe them. MULCHING AND IRRIGATION SHOULD NOT BE NEEDED BUT VISUAL EXAMINATION AFTER SEEDING WILL DETERMINE IF OTHER PROCEDURES ARE NEEDED.

VI. VARIANCE (Rule R613-005-111):

Any planned deviations from rule R613-005-007 (Operating Practices) or Rule R613-005-010 (Reclamation Practices) must be identified below.

<u>Rule Number</u>	<u>Title/Category</u>
_____	_____
_____	_____
_____	_____
_____	_____

For each variance requested, attach a narrative statement describing and delineating the area proposed to be affected by the variance, justifying the need for the variance, and discussing alternate methods or measures to be utilized.

VII. SURETY (Rule R613-005-112)

A Reclamation surety must be provided to the Division prior to final approval of this application. In calculating this amount, the Division will consider the following major steps:

- 1) Clean-up and removal of structures.
- 2) Backfilling, grading and contouring.
- 3) Soil material redistribution and stabilization.
- 4) Revegetation (preparation, seeding, mulching)
- 5) Safety and fencing.
- 6) Monitoring.

To assist the Division in determining a reasonable surety amount, please attach a reclamation cost estimate which addresses each of the above steps.

SEE INTRODUCTION, p. 2

VIII. SIGNATURE REQUIREMENT

I hereby certify that the foregoing is true and correct.

Signature of Operator: E.B. King

Name (typed or print): E.B. KING

Title of Operator: PRESIDENT

Date: 7/11/88

PLEASE NOTE:

Section 40-8-13(2) of the Mined Land Reclamation Act provides for maintenance of confidentiality concerning certain portions of this report. Please check to see that any information desired to be held confidential is so labeled and included on separate sheets or maps. Only information relating to the location, size or nature of the deposit may be protected as confidential.

Confidential Information Enclosed: () Yes (X) No

Attachment I

Vegetation Cover Sampling

Vegetation cover sampling determines the amount of ground that is covered by live vegetation. It is divided into four categories which equal 100 percent. They are:

Vegetation - This is the live perennial vegetation. Care should be taken to avoid sampling in disturbed areas that have a large percentage of annual or weedy vegetation, such as cheatgrass and russian thistle.

Litter - This is the dead vegetation on the ground, such as leaf and stem litter.

Rock/rock fragments - This is the rock and rock fragments on the soil surface.

Bare ground - This is the bare soil which is exposed to wind and water erosion.

Cover Sampling - The following methods are acceptable:

Ocular Estimation

This method visually estimates the percentage of ground covered in a plot by the four components. Plot size is usually a meter or yard square or a circular plot 36 inches in diameter. Ten to 20 plots should be randomly sampled in each major vegetation type.

Line Intercept

Percent ground cover is obtained by stretching a tape measure (usually 100') over the ground and then recording which of the four components is under each foot mark. At least two of these transects should be randomly laid out and measured in each major vegetation type.

Soil Survey and Sampling Methods

If a SCS or land management agency soil survey is not available, the operator shall delineate all soil types that will be disturbed by mining on a map. Each soil type shall be sampled for its characteristics and inherent properties. Representative sampling locations should have similar geologic parent material, slopes, vegetative communities and aspects. The sampling locations should be representative of the soil type and be identified on the map. Sampling shall be at a minimum of one (1) for each soil type disturbed.

The soil map needs to be of sufficient scale so that each soil type can be accurately located on the ground.